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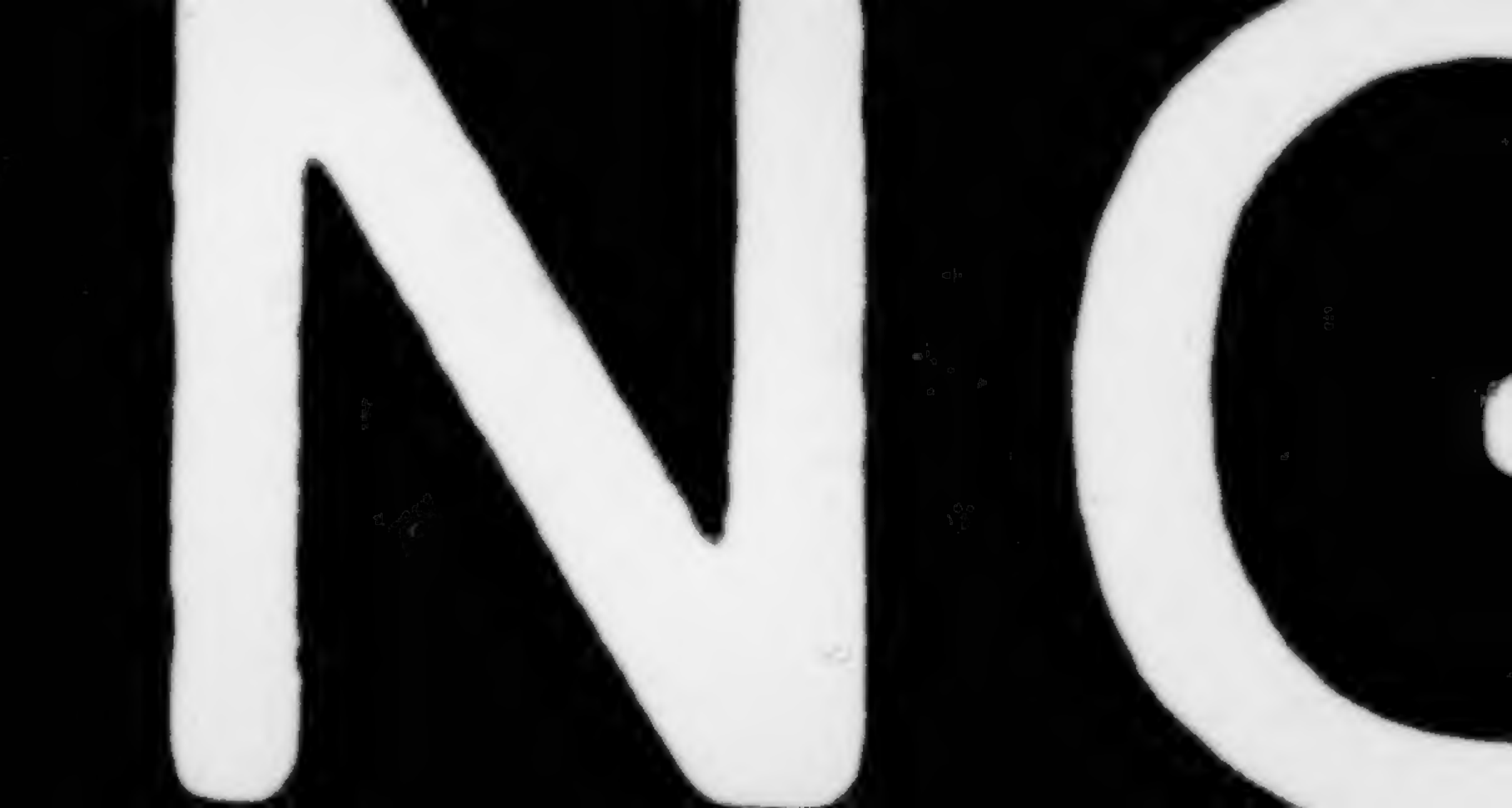

DOCUMENT RESUME

ED 056 171 VT 013 870

AUTHOR Ward, William Gary
TITLE Research Utilization Specialist; Review and Synthesis of Selected Literature on Research Development.
INSTITUTION Oklahoma Vocational Research Coordinating Unit, Stillwater.
REPORT NO Project-Rep-15
PUB DATE Jul 71
NOTE 22p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Educational Needs; *Educational Researchers; Interviews; Job Analysis; Job Training; Literature Reviews; Research Coordinating Units; *Research Utilization; *Specialists; *Synthesis

ABSTRACT

There seems to be a move in the world of education to institutionalize some specific job positions in the development stage of research. One such position is the Research Utilization Specialist, who would bridge the gap between the actual research and its subsequent implementation. Thus, the purpose of this study was to synthesize selected literature and interviews with education research personnel in order to draw conclusions relative to the status of this approach to research development and utilization. This synthesis of information revealed several findings, including: (1) There is a low utilization of research findings and this is considered a problem, (2) The creation of a professional job position in the development stage is being advocated as one solution to this problem, and (3) The position would serve to package research findings for delivery to the practitioner. A major conclusion of this study is that there is a need for a Research Utilization Specialist, and training programs will be established. (Author/JS)

ED056171

REPORT OF RESEARCH IN VOCATIONAL TECHNICAL EDUCATION

RCU

VOCATIONAL RESEARCH COORDINATING UNIT

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PROJECT REPORT # 15

RESEARCH UTILIZATION SPECIALIST

Review and Synthesis of Selected Literature on Research Development

William Gary Ward

July, 1971

PREFACE

I have attempted to reflect the current thinking concerning specific job positions in the development stage of research. I have not attempted to paint a historical picture of the institutionalization of these positions. Therefore, the order in which names appear are not in any way intended to give credit for originality of ideas.

I noted, after a review of the context of this paper, two overriding themes which seem to require further consideration. The first was the need the literature expressed for a closer alignment of the work of the researcher to the needs of the schools. This is probably desirable. However, too much concern on the part of the researcher toward short-term pragmatic problems could be as dysfunctional as the other extreme. The second was the desirable age at which a person should begin a career in research and development; the literature indicated youth, specifically thirty-two to thirty-five years of age. I suggest the reader examine those findings closely because at times innovations come from individuals who are inside the organization they simply become frustrated, and begin to climb the organizational ladder in order to induce change.

I appreciate the latitude that Dr. William W. Stevenson, Head of the Division of Research, Planning, and Evaluation, allowed me in this review. I thank Dr. Wm. D. Frazier, Director of the Oklahoma Research Coordinating Unit, for his unique ideas on this subject. I thank Paula Horne for her critique of the mechanics of this paper. I am indebted to the director and staff of the Communications Center for their skill in the typing of this article.

William G. Ward

TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
II.	REVIEW OF LITERATURE	5
III.	NEEDS AND ALTERATIVES	7
IV.	PROFESSIONAL TRAINING PROGRAMS	10
V.	SUMMARY AND CONCLUSIONS	13
A SELECTED BIBLIOGRAPHY		15

CHAPTER I

INTRODUCTION

In most bureaucratic organizations there exist auxiliary work activities which seem to lie at the fringe of formal job descriptions. At its rudimentary stage, these dispersed tasks are lacking in cohesiveness, boundaries, and common purpose. Yet, if it is discovered that these extra-additional-duties are more than "step-child chores" and do contribute significantly to the attainment of the organizational purpose, the work will become institutionalized (1). This evolutionary process entails the routinizing of the tasks, naming of the job, setting of specific boundaries of authority and technical competency, and in some situations, the establishment of measurable objectives which the role incumbent should attain.

This seems to be the current situation in the area of research development in vocational education where a unique role is emerging for a Research Utilization Specialist (2). This position as the development stage in FIGURE I (3) indicates will serve to bridge the gap between research and implementation (4).

A bridge builder in this area is not a new idea. Teachers, county agents, advertising agencies, county health departments, safety engineers for insurance companies, and many others have long served as a link between the researcher and user. Yet, many of those, while concerned with the development of research, have invested the bulk of their time in diffusion and adoption. There are also areas where this procedure has not functioned as well as expected. The National Aeronautics and Space Administration was dismayed to discover in 1968 that the "up-take" of its inventions and innovations by society was only 10 percent (5). Lippitt (6) observed that innovations in education meet a similar fate.

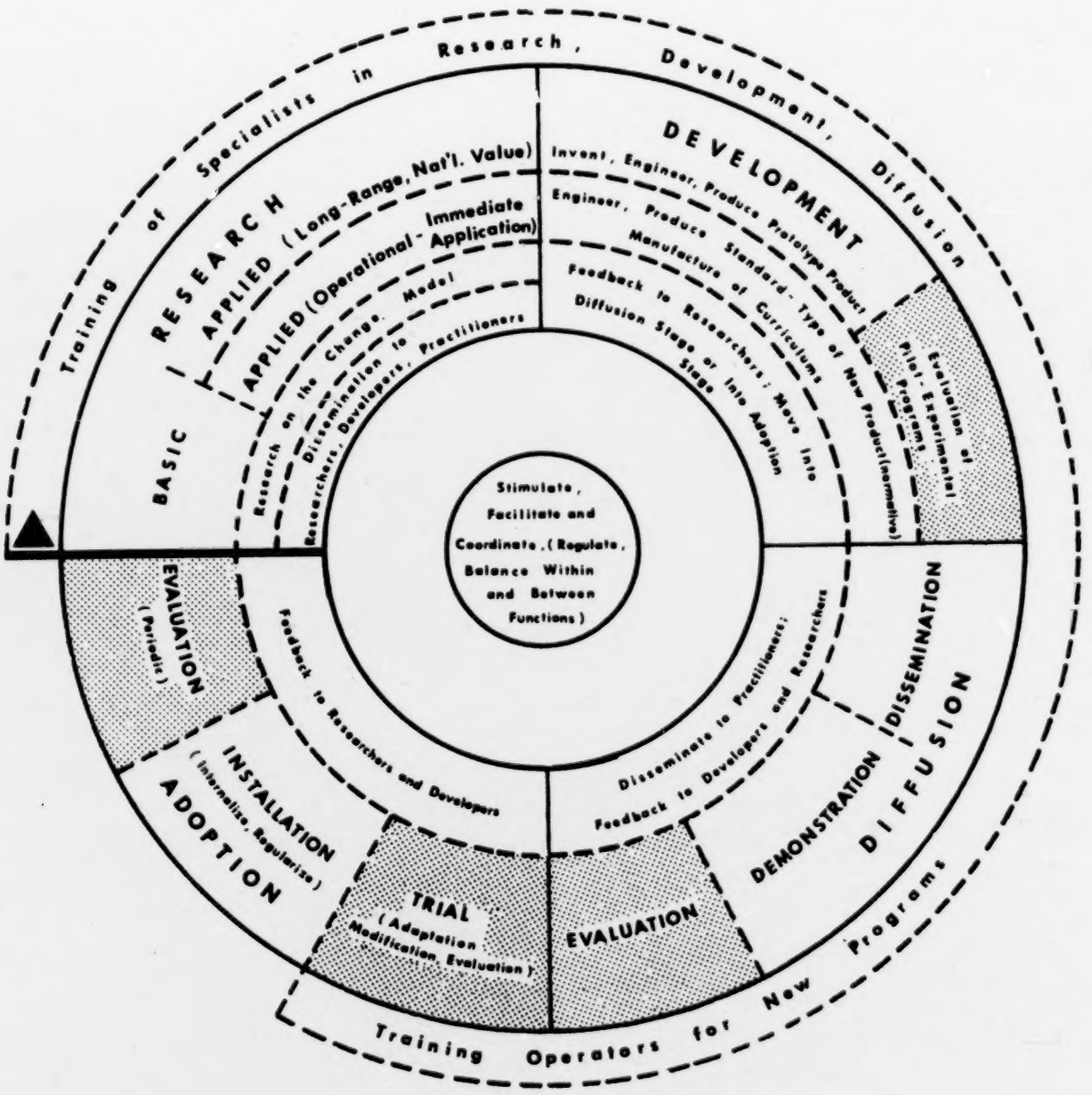
Is there a role in Vocational Education for a Research Utilization Specialist? Is this the proper time for his introduction into the system? Are we talking about the institutionalization of a Research Utilization Specialist or are we actually looking at a

small part of the institulization of innovations in the public schools? Whatever, this paper will reflect the trend of current literature and thinking concerning the developmental stage of research.

Figure 1

EDUCATIONAL CHANGE MODEL

(Read Clockwise)


Training of Specialists in Research, Development, Diffusion
RESEARCH
BASIC
APPLIED (Long-Range, Nat'l. Value)
APPLIED (Operational - Immediate Application)
Research on the Change Model
Dissemination to Researchers, Developers, Practitioners
DEVELOPMENT
Invent, Engineer, Produce Prototype Product
Engineer, Produce Standard - Type of New Product(normative)
Manufacture of Curriculums
Feedback to Researchers; Move into Diffusion Stage or Into Adoption
Evaluation of Pilot - Experimental Programs
Stimulate, Facilitate and Coordinate, (Regulate, Balance Within and Between Functions)
EVALUATION (Periodic)
Feedback to Researchers and Developers
Disseminate to Practitioners; Feedback to Developers and Researchers
DISSEMINATION
DIFFUSION
DEMONSTRATION
INSTALLATION (Internalize, Regularize)
ADOPTION
TRIAL (Adaptation Modification, Evaluation)
EVALUATION
Training Operators for New Programs

Statement of the Problem

How does one put research findings to work? The shelves in many libraries are full of unused research documents while in the public schools there are many serious problems that need to be solved. How does one improve the percentage of uptake? Also, how does the researcher know if his finding will actually perform in the public school? Where does he receive feedback? How does he know if he needs to redirect or realign his areas of investigation? Some authors feel that the current system could be improved. Is the Research Utilization Specialist one of the answers?

Purpose of this Study

The purpose of this study is to synthesize selected literature and the context of interviews with educational research personnel concerning the institutionalization of the Research Utilization Specialist and from this synthesis to draw conclusions relative to the status of this approach to research development.

Need for the Study

The survival of an institution is sometimes based upon how well that institution can reflect the values, mores, and goals of the society and culture from which it was created (7). Therein is a problem for the public schools. How do they reflect and "upgrade" such a diverse and continually changing civilization (8).

It seems logical that the schools must change to meet the needs of the population they serve. Yet, this must be accomplished while maintaining a high degree of homeostasis. The holding of certain activities constant while changing others in a domesticated (9) organization is a most difficult task. Decisions in this area are made by administrators daily. When administrators are considering possible alternative methods of introducing change, this paper should provide a collection of current thinking concerning the use of Research Utilization Specialists.

Scope of the Study

This review synthesizes selected documents from the Educational Resource Information Center (ERIC) distributed between January 1, 1970, and April 31, 1971; views expressed in interviews and lectures by selected staff members of Oklahoma State University and the Research Division of the Oklahoma State Department of Vocational and Technical Education; and selected articles related to educational administration and change. The reader should fully understand that selection and rejection of information for this publication was based solely on the value judgment of this writer.

Definition of Terms

Technical terms will be defined when necessary in the text. The spelling reference is Webster's Seventh New Collegiate Dictionary.

CHAPTER II

REVIEW OF THE LITERATURE

This writer could not locate, in this highly specific area, a review and synthesis on which this paper could build or complement. There have been some bibliographies collected but very little syntheses. This reviewer resorted to the screening of reference bibliographies from reports, articles, research papers, and like material in the hope of discovering a beginning point for this paper. Some success was achieved.

A document from the Oregon University ERIC Clearinghouse on Educational Administration (10) offered a bibliography of forty-three items concerning the linking of schools and state departments of education to research units. Their concise analysis was that the current research development programs are being criticized but that few alternatives were being offered by the literature. Mosher (11) in a study of some school's research utilization job positions has a bibliography of some 60 articles. Mosher noted that these positions are limited by lack of autonomy, role uncertainty, and inadequate resources. Guba (12 and 13) noted the problem of low utilization of research and offered a change model based on five elements: utilization, information, research, development, and diffusion. Klausmeier (14) suggested a plan of a research and instruction unit led by a learning specialist who acted as liaison to an R&D unit.

Three reports from the Office of Education did serve as a foundation for refining this reviewer's perception of the situation. The National Center for Educational Research and Development presented a useful record of research and development in the United States (15). The Division of Comprehensive and Vocational Education (16) listed the titles of final reports funded over a four-year period. The Office of Education sponsored a lengthy study conducted by Clark and Hopkins (17) on manpower needs in research, 1964-1974. The publications indicated a failure in the developmental stage. All tended to foresee a need for a Research Utilization Specialist type. However, the Clark report predicted that this position would not mature during the time frame of his study.

Summary

A specific review and synthesis on the Research Utilization Specialist could not be located. Therefore, the reference lists of several publications were screened for possible beginning points for this paper. The foundation seems to be: there is a breakdown in the research cycle, one weak link is the development stage, a development specialist is in the offing, and little money has been funded for training in this specific area. However, this reviewer shall only accept the conclusion that "there is a low utilization of research findings." This conclusion will be reinforced continually in the remainder of this paper. The other apparent findings shall be considered at this point as value judgments based on philosophy or predicted success of a potential program.

CHAPTER III

NEEDS AND ALTERATIVES

A very perceptive speech by Koenig (18) serves to place the entire situation of research development into perspective. The thoughts were delivered at the March, 1970 meeting of the American Educational Research Association. He pointed out that an advanced technological society expects immediate returns on its investments. That observation has tremendous relevance to R&D administrators who have to compete for funds. The observation also, if carried to its end-point, could further mean that research should establish a dialogue or linking unit to its receiving public. Runkel (19) in an Occasional Paper from the Oregon University Center of Advanced Study of Educational Administration noted the same situation and formalized the concept by suggesting the establishment of a linking organization that could perform this communicative function.

Farr (20) in an Occasional Paper from Stanford emphasized that for "knowledge to have value, it must move from the mind of the individual who created it to the mind of those responsible for its utilization." He emphasized that it is not desirable for the researcher and user to work directly together--One has vested interest; the other needs objectivity. He developed a model for this linking organization. (Figure 2)

Guba, Horvat, Steinhoff, and Owens (21) have noted basically the same observation, which in Guba's words is:

> "There is a tremendous gap between knowledge production and knowledge utilization that cannot be spanned either by the producer or utilizer himself, or even by those two acting in concert, at least in the typical situation. New mechanisms and agencies, using special techniques, are required to perform this bridging or linking function. (Also) knowledge (in the form of theory or research findings) is at best only one of a number of input factors in any practical situations. No practical problem can be solved using knowledge alone--a whole host of economic, social, political, motivational, cultural, and other factors must be considered."

However, Steinhoff and Owens doubted if the R&D units had the time to wait for the development of linking organizations and suggested a stop-gap method of "increased utilization of the college professors in this role."

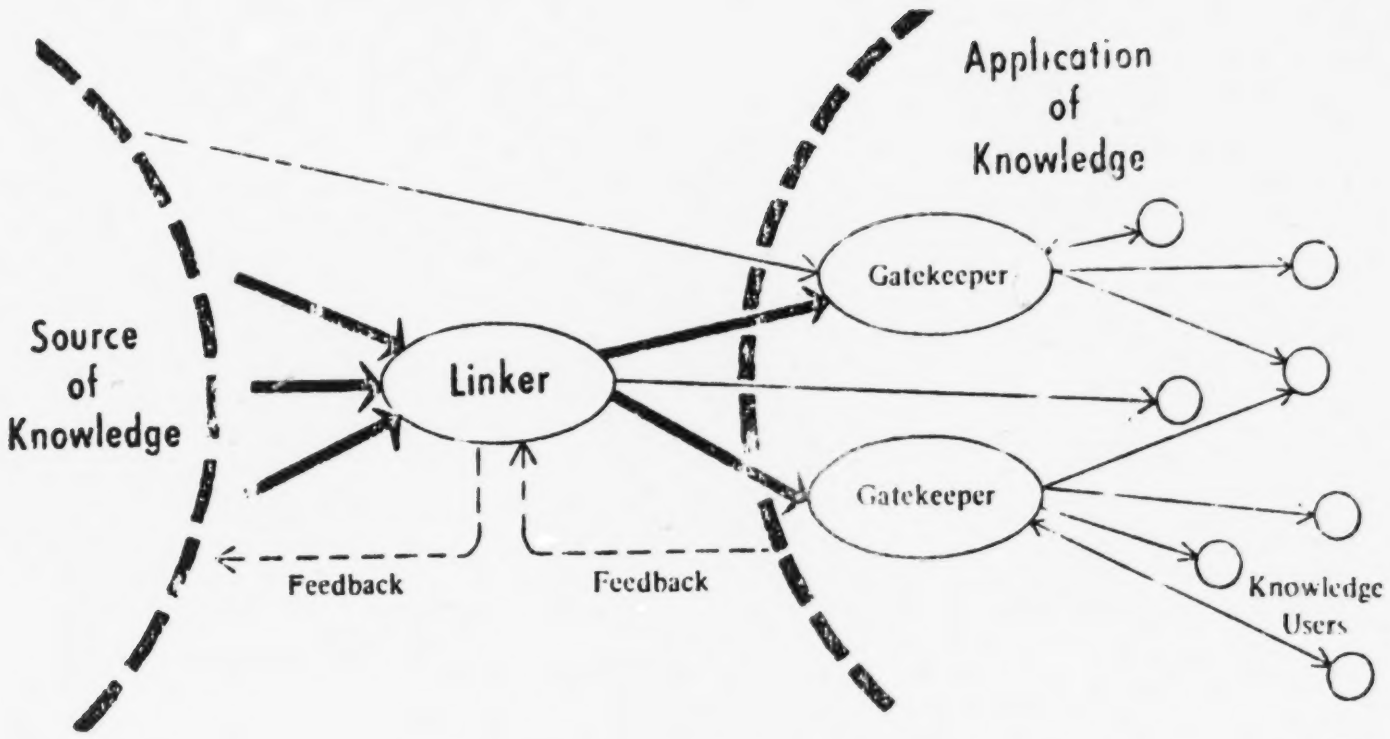


Fig. 2
The Flow of Educational Knowledge
(Expanded Diagram)

A slightly different view was presented by Roberts (22), in another Occasional Paper from Stanford, in that "we need a knowledge of research evaluation prior to adoption of innovation based on research." This ties in well with a statement from Bloom (23), in which he indicated that out of 70,000 research studies conducted during a twenty-five year period only one out of every thousand had any significant influence. Yet, Kahn (24) and Getzels (25) have noted that the significant influence of research comes not piecemeal, study-by-study and practice-by-practice. It comes rather cumulatively through altering the general conceptions--what Kahn calls the paradigms--of human behavior which serve as the context for educational practice. Will this paradigm construction and the probable bridging of several disciplines be a role of research development institutions?

A rather unique observation was presented by Barrett (26) in a speech before the 1970 meeting of the American Psychological Association. Besides agreeing in point with the previously presented articles, he indicated some difficulties in establishing linking units. One of these problems was what he referred to as the "Immortality Syndrome," which goes something like "if I follow-up someone else's research, I will not get credit for it." Barrett also noted that most innovations come from young men, mostly under thirty-five years of age. He contrasted the research in physical science to psychology and noted that the physical scientist is not at all embarrassed to develop someone's research.

Gearing (27), from the Research Foundation at the State University of New York, reported another problem area. His groups noted that researchers, school personnel, and members of the communities all have different priority systems, the critical contrast being the long-term theoretical interest of the researchers and the short-term pragmatic interest of the school and the community.

Another problem area which this reviewer cannot legitimate by quoting references is that some researchers are adverse to having their "creations" handled, manipulated, changed, etc. This could become particularly grating if the researcher and developer are in the same hierarchical setting.

From the operational segment of research, Mager (28), Stevenson (29), Glasser (30), and Frazier (31) have all indicated a need for specially trained personnel in the development stage of research. Most have indicated that they are training their own when they find the "right type" of person.

Summary

The possible duties of a linking organization or a Research Utilization Specialist seems to indicate the need for a superman in this position. The role-incumbent should be able to evaluate research, construct paradigms of meaningful information, observe the needs of the user public, align the priorities of the researcher and user, have a very small ego, be under thirty-five years of age, and be able to synthesize research findings into packages that can be used by the schools.

CHAPTER IV

PROFESSIONAL TRAINING PROGRAMS

If one accepts the value judgment that the increased uptake of research findings is desirable, then this intrusion into training programs for developers should be useful. There have been many programs funded by USOE, states, and professional organizations. Even a current list would be lengthy, yet the majority have probably emphasized training for research, to a lesser extent research and development, and a small number have been strictly for development. There would seem to be some items and characteristics of all the prior training that might be transferable to a training program for research developers.

Popham's (32) report on the training program conducted by the American Educational Research Association in 1969 indicates that a portion of the program was devoted toward development training. Marascuilo's (33) report on the 1970 training program indicates the same. A paper presented by Okorodudu (34) at the 1970 American Educational Research Association's meeting described two instruments that should be of use to a training program director. One was a Research Orientation Questionnaire which measures attitudes toward a training program. The other was an Omnibus Questionnaire which obtained information concerning biographical data and the students' attitudes toward a training program. Florida University conducted a short-term program for training "linkers" to increase the utilization of research in vocational rehabilitation (2). Baker (35) at the Southwest Regional Education Laboratory established a training program for utilization of research by practicing educators. The Center for Vocational and Technical Education at Ohio State and the American Vocational Association (36) have conducted several workshops. Miami University (37), in its training program for research personnel, selected students based on two criteria--dynamic personality and intellectual code. Perdue University (38) conducted a program for training undergraduates in educational research. Torry (39) evaluated the effectiveness of Research and Instructional Unit in a California high school. The Michigan Department of Education (40) conducted a program directed toward practice-oriented research which included an internship.

Roaden (41) reviewed the findings of eight studies, 1965-1969, of educational research, development and dissemination training programs. One of the results which he reported in a paper at the 1969 meeting of the American Educational Research Association should be of interest to program developers. "The difficulties of retraining (personnel) for RD & D roles after career patterns are established are complex and for the most part only minimally successful." Similar findings were listed by Fleury and Cappelluzzo (42) at Massachusetts University. Their study aimed to ascertain the relationship between entrance requirements for graduate-level training programs in educational research and the trainee's success in completing or gaining reappointment to the program. They investigated five segments of the admission requirements: standardized tests; undergraduate and graduate level grade points; academic background; professional educational experience and certification, including the number of years of such experience that trainees had at date of admission; and age at day of admission. They concluded that the entrance requirements of sixty programs in this area effectively predicted success only about 15% of the time. Their review of some very prestigious literature was informative. Millikan (43) asserted that individuals who have spent from one to five years in teaching or other school experiences are potential recruits for research training. She goes on to say that evidence shows that individuals who spend at least six years in teaching or other school experiences are not potential recruits for research. Buswell's (44) conclusions support those of Millikan. He further indicated that the number of years of teaching experience prior to the doctor's degree is negatively related to research production in the ten years following the degree. Sieber and Lazarsfeld's (45) conclusions were related to whether any professional experience and/or teaching certificate should be required. The results were that schools which require both professional experience and a teaching certificate are least productive of researchers. Schools requiring only a teaching certificate or neither a certificate nor experience are most productive. Buswell and Millikan present further findings which state that prospective research trainees should be selected who will be thirty-two or younger at the completion of the doctoral program.

This reviewer stresses again that most of these studies dealt with the training of research personnel where the student's competencies will be directed toward the acquisition of new knowledge. Now, as to how much of the findings are transferable to training programs for research developers is not expressed in the reviewed literature.

There are several differences in research and development. Bowman (46) in a paper presented at the 1969 Regional Council meeting of the Southeastern Educational Laboratories defined development as the systematic use of knowledge and understanding gained from research and directed to the production of useful materials, devices, systems, and methods. Such work includes the design, testing, and improvement of prototypes and processes. He further states that the culmination of the development process is represented by a product designed to accomplish some useful, defined purpose. He listed other differences in research and development. Research tends to be an individual enterprise, where development usually involves the joint efforts of synchronous groups of individuals. Research procedures are developed and systematized according to the scientific method of inquiry whereas development may be viewed as an engineering process. The several steps he listed in the development process might be of interest to the designers of development training programs. The initial step in product development is formation or conceptualization of the product. The second is the instructional specification stage where the objectives for the product are specified. The third step is the development of evaluation instruments. The fourth is material development. The fifth is a pilot test. The sixth is revision. The seventh step is product integration packaging. The eighth is a product field test. The ninth is another revision. The final step is product review and process evaluation.

Four other documents might be of some interest to a program designer. The C.O.R.D. program, Consortium Research Development, in Oregon is described by Hamreus (47). Fortune (48) reports on an undergraduate research training program at Memphis State. Betz (49) from the personnel and guidance area, describes the role of a project consultant. Lastly, Preuss (50) describes an information search and recording system for research and development organizations.

Summary

The bulk of the training programs reviewed placed emphasis on research rather than development. Many of the findings in terms of entrance requirements, curriculum guides and needed competencies are difficult to relate to the specific training of a Research Utilization Specialist.

CHAPTER V

SUMMARY AND CONCLUSIONS

There seems to be a move in the world of education to institutionalize some specific job positions in the development stage of research. One of these is the Research Utilization Specialist who would bridge the gap between research and implementation.

The purpose of this study is to synthesize selected literature and the context of interviews with educational research personnel concerning the institutionalization of the Research Utilization Specialist and from this synthesis to draw conclusions relative to the status of this approach to research development.

Findings

1. There is low utilization of research findings and this is considered as a problem.

2. The creation of a professional job position in the development stage is being advocated as one solution to the problem.

3. The position would serve to package research findings for delivery to the practitioner.

4. The position would also serve a "cybernatic-function" to both researcher and practitioner.

5. A portion of the literature stresses the need for development organizations that are autonomous, while other literature emphasizes the integration of the developer at the user level or at the researcher level.

6. The majority of monies allocated for the training of research and development personnel has been used to train researchers.

7. The process for selecting trainees for development training programs is not well developed in the literature.

8. The curriculum for the training program is not well developed in the literature.

9. The administrative concerns such as monies, resources, technical level personnel needed and supervisory techniques to be used by unit heads are not developed in the literature.

Conclusions

1. There is a need for a Research Utilization Specialist and training programs will be established.

2. The world of education may expect too much from this new position.

3. The philosophical background, technical competencies, communication skills, and human relations activities of the research developer are different from those required by the researcher, teacher, or administrator. If the Research Utilization Specialist is trained in a curriculum that is made up of pieces of those training programs, he may or may not develop the unique skills required for his position.

Recommendations for Future Studies

There are three areas open to inquiry. The first is the development of a selection or screening criteria for trainees. The second is the development of a competency based curriculum for the training program. The third is the development of several alternative plans covering the administrative concerns, such as: Where will the specialist fit in the hierarchy? Where will the monies for salaries, packaging, and technical level personnel come from? Will he require an office, a shop, a laboratory, hardware, etc.? Will the administrator need to develop any unique method of supervision, etc.? However, I suppose we learn by doing.

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